THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

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"LEAFLET 292."

We reprint, by request, the leaflet on Symptoms and Notification of Foot-and-Mouth. It is issued primarily "with a view to supplying farmers and stockowners with the information," and with that end in view, "it is thought that it might usefully be brought to the notice of practising veterinary surgeons." The endeavour to spread this necessary information is doubtless an outcome of recent happenings in the West of England, and the leaflet is well suited for its purpose: the details are succintly given, and are sufficient. Copies can be obtained free of charge—see page 268.

POSITION OF OFFICERS A.V.C. (T.F.)

Reference was made in our issue of last week to this subject. This week we would direct attention to the resolution under the heading of T.F., passed at the recent meeting of the Royal Counties V.M.S. It carries an added significance in the fact that a member of Council, R.C.V.S.—therefore in a position to know—was in the chair. There is also a short note of further questions on the subject in the House of Commons.

A PROFESSIONAL ADVANCE.

Some of our readers will have noticed last week that the paper on Hog Cholera, by V. A. Moore, was quoted from the "Journal of the American Veterinary Medical Association," but only those acquainted with American veterinary literature will have recognised this as a new title. The following extract from an introductory by the editor in the number for November—No. 2 of the new series—tells the why and the how of the new departure.

"It is doubtful if Dr. Liautard, as an active participant in the formation of the U. S. Veterinary Medical Association, fully appreciated the chance of its later development into the American Veterinary Medical Association and the possibilities opened up for welding the veterinary profession of this and adjacent countries into a more capable and homogenous mass.

Five or six decades ago the veterinary material of this country was decidedly raw from an educational standpoint as compared with European standards. The diagnosis was easy to Dr. Liautard and as a remedy he organised one, if not the first of the veterinary schools which has survived. Education, then as now, is fundamental to real progress.

Later he established the *American Veterinary Review*, which at the outset was the official organ of the U. S. Veterinary Medical Association. In 1890 an extra number of the *Review* was printed, devoted exclusively to the proceedings and papers presented at the first meeting of the Association held in Chicago—the twenty-seventh meeting of the Association. From the records this appears to be the first separately printed volume of the proceedings: in subsequent years the Association printed its own proceedings and the official connection with the *Review* became less apparent. It, therefore, seems fitting that the Association, in considering the abandonment of its separate volume of proceedings, which because of its considerable size was beginning to cost about as much as the annual dues amounted to, and to substitute a Journal for it, should take over this publication for its use."

There is nowhere a combination of veterinary surgeons which wields such power as the American V.M.A.—a power built up in a very few years, a position only possible in a comparatively new community. They have brought the teaching colleges into line in the matter of qualification—only graduates of approved colleges are acknowledged members of the profession. The area covered by their organisation is enormous, and the number of "local societies"—a much wider definition than is expressed by the term in these islands—is continually increasing, and though they are not affiliated, they are to some extent "feeders" to the larger organisation. It is not surprising that the Association feels itself strong enough to maintain a Journal, and as the first under the control of a body of the profession we heartily welcome it.

The November number is in several respects the first under the new conditions, since that for October though actually issued by the Association was in a transition stage. There is a very distinct improvement both in matter and appearance—the former partly on account of the inclusion of several papers presented at the Annual Meeting. We shall refer to this again next week.

FACIAL PARALYSIS IN THE HORSE.

By HENRY TAYLOR, F.R.C.V.S., Haywards Heath.

The subject was an army horse of the heavy van type, and the paralysis was confined to the right side of the face. The cause was no doubt an injury in the region of the zygomatic arch, for the hair was knocked off that region. There was nothing remarkable about the symptoms, they were just the ordinary ones. The lips and nostrils were drawn to the sound side; the opening of the nostrils was distorted, and prehension of food was difficult. The eyelids and ears were not affected, but the lower lip was pendulous.

Treatment consisted of the infriction of ointments of iodine and mercury; but most of my other similar cases improved in the course of say six or eight weeks, whereas this one showed hardly any change for quite two months. Recovery now seemed rather doubtful, but in the course of the next month a slow improvement set in which was steadily maintained, and in about another month the animal regained full power in the muscles and the expression became normal.

A COMMON TREMATODE WORM FOUND IN HORSES IN WEST AFRICA.

The commonest trematode worm found in horses in Ashanti and in the Northern Territories is a fluke called *Gastrodiscus ægyptiacus* (Sonsino).

I estimate that 75% of the horses in these districts harbour these helminths. They are easily killed or expelled by the use of male fern, linseed oil and aloes. Their predilection seat is the cæcum and double colon, in which situations they are to be found adhering to the mucous membrane. In the many post-mortems made, these trematodes have never been found in the positions quoted in Neumann's "Parasitology," *i.e.*, in the stomach and œsophagus.

The order *Trematoda* is divided up into three or four families:—

(*a*) *Monostomidæ*.—Characters: one oral sucker, and they are unisexual.

(*b*) *Fasciolidæ*.—Characters: two suckers, oral and ventral, and are unisexual.

(*c*) *Schisostomidæ*.—Characters; two suckers, oral and ventral, and are bisexual helminths.

(*d*) Some authors make a fourth family, namely, *Paramphistomidæ*; others make this family a subfamily of *Fasciolidæ*.

The *Paramphistomidæ* are distinguished from the *Fasciolidæ* by the following characters; they have a ventral sucker terminal displacing the excretory pore, the excretory pore opens dorsally near the posterior end of the body, the pharynx is fused

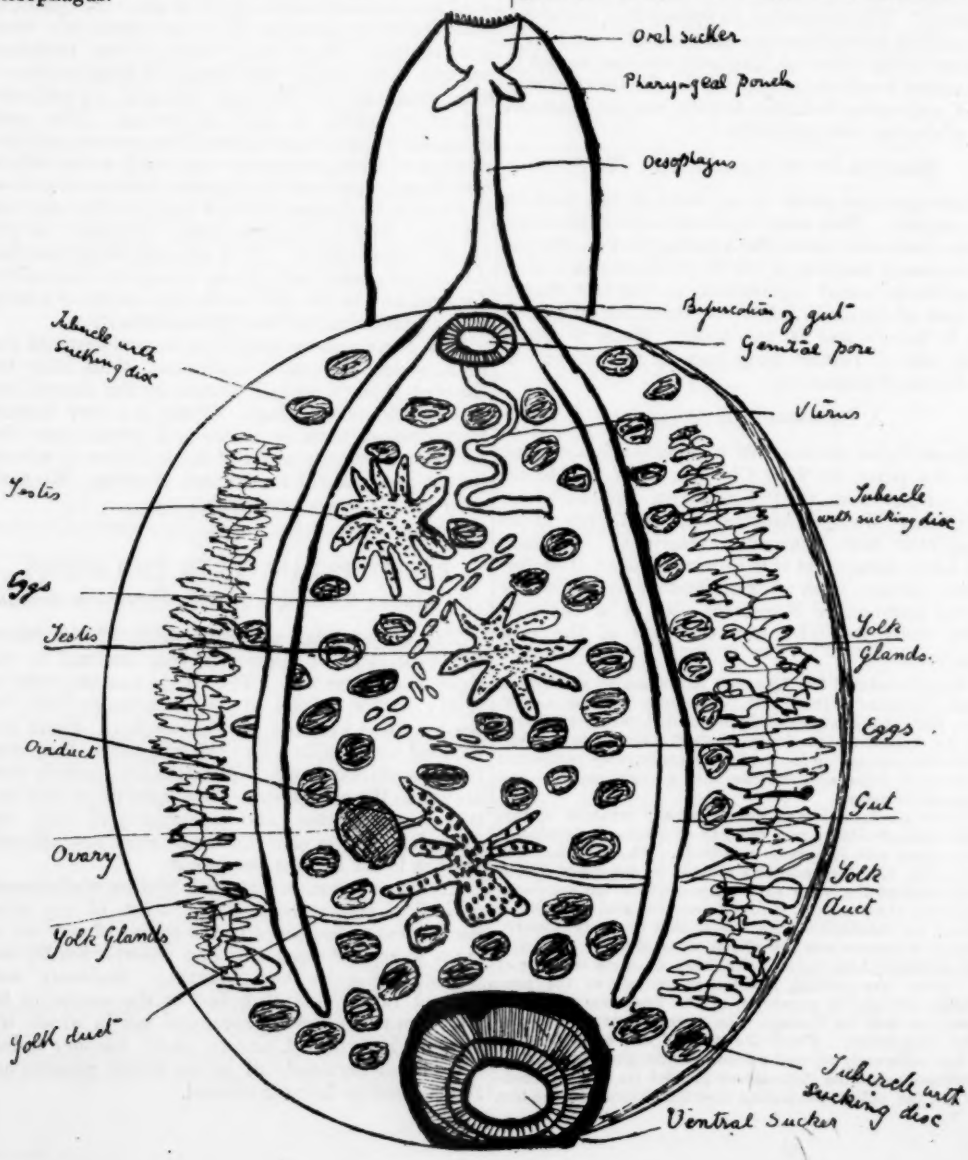

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Fig. 1.—Feet of a pig affected with foot-and-mouth disease. The vesicles have ruptured and the horn is separating.

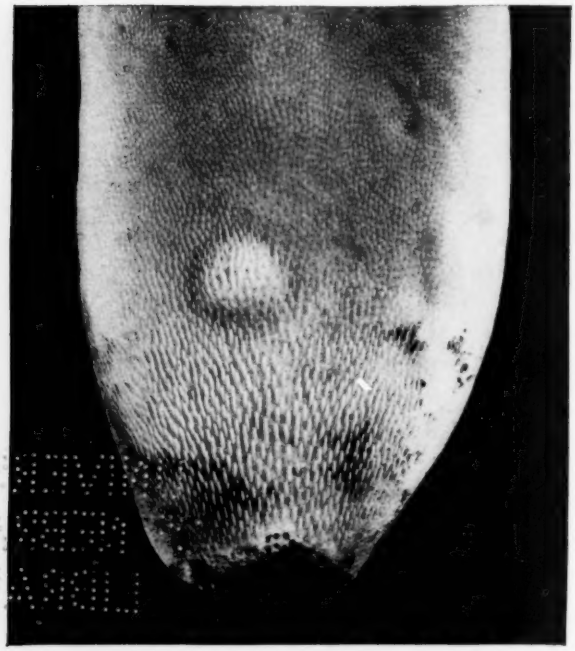

Fig. 2.—Portion of the tongue of an ox, showing early lesions of foot-and-mouth disease. The tip of the tongue shows a recently ruptured vesicle, while further back an unruptured vesicle is seen.

Fig. 3.—Tongue of an ox affected with foot-and-mouth disease, showing two recently ruptured vesicles and a considerable amount of scaling of the epithelial covering at other parts.

Figs. 1 and 3 are from the Report of the Departmental Committee on Foot-and-Mouth-Disease [Cd. 7270.] (London: Wyman & Sons, price 4½d.

with the oral sucker and their bodies are of conical or pear shape.

The family *Paramphistomidæ* is sub-divided into two sub-families:—

(*a*) *Cladorchidæ*.—Characters: with pouches present.

(*b*) *Paramphistomidæ*.—Characters: with pouches not present.

The sub-family (*a*) is again sub-divided into *Cladorchinæ* with their bodies pear shaped, and *Gastrodiscinæ* with their bodies flat.

The *Gastrodiscinae* possess two genera:—

(1) *Gastrodiscus*.—Sub-family characters and helminths possessing a head cone.

(2) *Homalogastor*.—Sub-family characters, but the head cone is not differentiated from the body.

The helminth that is the subject of this article—*Gastrodiscus aegyptiacus* (Sonsino, called after its discoverer)—belongs to the family *Paramphistomidae*, sub-family *Gastrodiscinae*, genus *Gastrodiscus*.

The fluke possesses a cylindro-conical neck, about 2 m.m. to 3 m.m. long, the body is flattened into an elliptical disc, the ventral surface being concave and studded with numerous tubercles, each of which is supplied with a sucking disc, the dorsal surface is convex and smooth. Its length is from 8 m.m. to 15 m.m., its breadth is from 6 m.m. to 12 m.m.

Its colour in its natural state is pink, becomes white when immersed in alcohol or in a solution of equal parts of a 1 % saline solution and a saturated solution of Perchloride of mercury. When acted upon by an anthelminthic and passed out in the dung, its colour is from brown to green.

The accompanying illustration, showing the situation of the internal organs, is a camera lucida drawing of the *Gastrodiscus aegyptiacus*.

The specimen was prepared in the usual way adopted for trematodes. Collected, and washed in a 1 % saline solution to which was added an equal part of a saturated solution of Perchloride of mercury, so as to kill the fluke. It was then washed in a distilled water to get rid of the mercury. After this it was placed between two slides and pressed out by careful pressure. The slides were held together by a rubber ring being passed round at each end of the slide. The specimen was then placed for about three days in a jar containing distilled water, to which was added about 20 drops of hæmotoxylin to the colour of port wine. It was taken out and the rubber rings slipped off, taken up and decolorised for about two minutes in a 1 % acid solution. It was then blued in running water, dehydrated in the following rotation—passed through 70 % alcohol, 90 % alcohol, and then into absolute alcohol. It remained in this for about three hours, after which it was it was taken up and cleared in creosote until one could easily make out the different internal organs. After this it was taken out and the excess of creosote taken off with blotting paper, and mounted in Canada balsam between a slide and cover glass.

W. P. B. Beal,
Veterinary Officer, Gold Coast Colony.

ABSTRACTS FROM FOREIGN JOURNALS

Clinical notes upon Herpes Tonsurans in the Horse.

Lebrasque, having observed 97 horses out of a stud of 370 affected with *Trycophyton equinum* (Sabourand and Dassonville) has published his notes upon the disease (*Receuil de Méd. Vét. d'Alfort.*)

He describes the lesions as follows. When the flat hand was passed over the horse's coat, slight and rather rough eminences could be felt, as if a few millet-seeds were sticking in the hairs. On closer examination, it was seen that the hairs at places where these eminences could be felt were bristling. At their roots, the hairs were glued together like a paint-brush. They could easily be drawn out; and, when drawn, they left a reddish epidermis which immediately discharged a citron-yellow fluid. This soon coagulated and left a scab upon the place. These hairless places always tended to extend; and, according to their age, they ranged from the size of a pin's head or a lentil to that of a two-mark piece. The author has seen bare places which, through the confluence of smaller lesions, had attained the size of a saucer, upon which small islands of hair were standing here and there.

The bare places were found especially upon the back and the croup, and were irregularly distributed. Some were also found in the parotid region, on the anterior edge of the shoulder, and in the middle line of the front of the chest and the buttocks. The horses affected were mostly young ones in the acclimatisation period.

The author adopted a variety of treatments. Radio-activity, applied to the bare places morning and evening, was one. A single application of iodide of mercury ointment was another. A third was potassium soap applied once daily after previous washing and rubbing of the places. Another was the protoiodide of mercury (grey mercurial ointment and tincture of iodine), and the last was the mixture recommended by Sabourand.

He found all these to have different disadvantages. Radio activity, potassium soap, and the protoiodide are all very slow in exercising their effects. The iodide of mercury ointment causes extensive hairless places, so that the horses look very objectionable and cannot be used for work. The best of the treatments is Sabourand's mixture, which consists of equal parts of pure Carbolic acid, Tincture of iodine, and Chloral hydrate, but this has the drawback of being somewhat caustic in its action. The author, therefore, altered the proportion of its constituents, and used fifteen parts of Carbolic acid, twenty-five of Tincture of iodine, and ten of Chloral hydrate. He applied this mixture in the following manner.

The hair was clipped, so as to expose all the hairless parts, and the skin of the lesions was well cleansed with ether. The mixture was then painted on once daily for three successive days. This caused

the formation of a brown scab, which was allowed to remain adherent for about a fortnight. A softening application (Oxide of zinc ointment) was then used, upon which the scab fell off and left the skin covered with fine hairs. Washings with soap and water completed the cure after about three weeks. In addition to curative treatment, the author, of course, took measures to prevent the spread of infection; and these followed the well-known lines.

Horses undergoing Sabourand's treatment can be worked quite well, so long as care is taken to keep their harness and rugs away from healthy horses.—(*Berliner Tier. Woch.*)

Ankylostomiasis in Dogs in Sierra Leone.

A report upon this subject by W. Yorke and B. Blacklock, being the fifth report of the thirty-second expedition of the Liverpool School of Tropical Medicine, has lately appeared (*Ann. Trop. Med. and Parasit.* 1915, July 31, Vol. 9, No. 3, pp. 425-427.

Of seven dogs examined by the authors all were found to be infected with ankylostomes, but two species of parasites were encountered—*Ankylostoma caninum* and *Ankylostoma ceylanicum*. These species were easily distinguished by the arrangement of the teeth. In the former there are three pairs of ventral teeth, and in the latter one large ventral pair and a second very small pair close to their base.

The rays of the lateral lobes of the caudal pouch are the same in the two species, but in the median ray of the dorsal lobe there is a slight difference. In both species the ray is bifurcated in the terminal third, each branch being tridigitate at the extremity. In *Anklylostoma caninum* the digitations are separated from each other by mere notches, while in *Ankylostoma ceylanicum* the outer notch is quite deep and cleft-like. The males measure about 6 to 7 m.m., and the females from 7 to 14 m.m.

No opportunity offered to ascertain whether *Ankylostoma ceylanicum* occurs in man in Sierra Leone.—(*Trop. Vet. Bulletin*).

A rare case of Hermaphroditism.

Hambach, of Nerchau, has recorded this case. In the summer of 1913, he was shown a small yearling pig. At first sight, the animal seemed to be a female, as the lips of the vulva could be recognised quite clearly. Closer examination, however, showed a rudimentary penis in the shape of a corkscrew-like body imbedded between the vulvar lips, and projecting out about 1-1/5 in. from the vulva. Testicles could not be demonstrated externally.

In November of the same year, the pig showed suspended appetite. Partly upon this account, and partly also because hermaphroditism was suspected, slaughter was decided upon. The post-mortem examination revealed the following conditions;—

The vagina and uterus were well developed. The uterus possessed two ovaries, and two well developed testicles were united to the ovaries. Both the fallopian tubes and the spermatic duct ended in the vagina. Both the male and the female sex were thus fairly distinctly represented. The flesh possessed the odour peculiar to that of boars and cryptorchids.

Pus was found in the uterus, and peritonitis was also present.—(*Berliner Tier. Woch.*)

W. R. C.

ROYAL COUNTIES VETERINARY MEDICAL ASSOCIATION.

[National V.M.A.—Southern Branch].

A General Meeting was held on Friday, Nov. 26, at 50 Friar Street, Reading, the residence of the Hon. Sec. and Treasurer; those present were: Mr. J. C. Coleman, (Swindon) President; Messrs. J. Willett (London), W. T. D. Broad (Marlborough), Vice-Presidents; R. J. Verney (Oxford), J. M. Parker (Faringdon), H. S. Dunn (Reading), and G. P. Male. Letters and telegrams of apology were received from Messrs. S. H. Slocock, G. E. King, F. H. W. Cundell, John Varney, H. G. Lepper, Frank Bazley, W. A. Hancock, J. R. Baxter, Jas. East, and G. H. Williams.

Conditions of Service.

Arising out of the minutes, Mr. Male recalled that at the last meeting a discussion took place on a letter from Mr. F. Bullock, Secretary of the Royal College. Mr. Willett then proposed, and Mr Verney seconded, a resolution that the Hon. Sec. be requested to forward copies of the documents received, together with a covering letter to each member, and at his discretion, to practitioners in the area who were not members, with a view to a special meeting being called, if necessary, to jointly discuss the whole matter. He had several replies expressing willingness to help neighbouring practitioners in any way possible if called upon, but he had had no request for help; so that it had not been necessary to call the special meeting.

The President said that, without being asked, their friend, Mr. Parker, had been doing for him what he could, and he was much obliged to that gentleman.

The Pupilage of Students.

The Hon. Sec. read a letter from the Hon. Sec. of the Eastern Counties V.M.A., enclosing copy of resolution passed at the annual meeting of that Association on the 9th March, 1915.

Mr. Willett said the matter was thoroughly discussed at the meeting of the Central Association, when a resolution was passed that they were quite in agreement that such action was desirable, and would be willing to agree that it should be compulsory during the college career of students, but that they could not endorse the resolution in the form submitted.

The Hon. Sec. thought, personally, that it would be a big mistake to send a man when he left school for a year into practice. He would get out of the habit of study and acquire a disinclination for books. (Hear, hear).

Mr. Willett added that, in his opinion, instead of a fellow "slacking" through the vacations, he should be forced to go through some practice. There were now very few students and there should be no difficulty in finding opportunities for practice.

The President proposed, "That this Association is in accord with the Eastern Counties Association, in so far that a compulsory pupilage of twelve months is necessary, but is of opinion that this should obtain at any time before pupils are granted their diploma."

This was seconded by Mr. Parker, and carried.

The HON. SEC. read a letter from Mr. Wm. Shipley, of Gt. Yarmouth, resigning his membership of this Association, owing to the war, adding that he hoped the time would come when he could again attend the meetings. Mr. Male said he wrote Mr. Shipley, expressing regret, appreciating his reasons for resigning, and hoping that when the war was over he would see his way to rejoin. His presence at their meetings, he added, although not frequent, had been much appreciated by all the members, and he would at all times be welcomed by them, either as a visitor or member. They were going to have a dinner when victory was won or peace declared, when they hoped to see Mr. Shipley among them. (Hear, hear).

Mr. WILLETT moved, and Mr. VERNEY seconded, that Mr. Shipley's resignation be accepted with regret, and that the meeting fully endorses Mr. Male's letter to that gentleman. Carried unanimously.

ELECTION OF OFFICERS.

The PRESIDENT proposed that Mr. Willett be elected President for the ensuing year.

MR. MALE seconded with much pleasure, and the resolution was heartily passed.

Mr. WILLETT, returning thanks for the honour, said he feared his year of office would not be a very full one, but he hoped that during the year they would have that bumping peace dinner they were thinking of. (Applause).

Vice-Presidents. Messrs. W. A. Hancock, W. T. D. Broad, J. M. Parker and J. C. Coleman were unanimously appointed, on the motion of Mr. WILLETT, seconded by Mr. DUNN.

Hon. Auditor. On the proposition of Mr. WILLETT, seconded by Mr. VERNEY, Mr. Percy J. Simpson (Maidenhead), who is on active service, was heartily re-appointed, the Hon. Secretary being requested to ask another member to fill Mr. Simpson's place during his absence.

Hon. Sec. and Treasurer. The PRESIDENT, in moving that Mr. Male be re-elected, said that gentleman was absolutely the backbone of their Association. (Hear, hear). He had skilfully piloted them through a most stormy time. (Applause).

Mr. WILLETT had much pleasure in seconding the resolution, which was passed with acclaim.

Mr. MALE observed that after the very kind remarks which had been made he could not refuse to continue in office, although he really felt that some fresh blood ought to be introduced. Things had been very difficult with Mr. Coleman away; but if they did not mind the Association just running on as it was now he would be very pleased to do his best. (Applause).

ANGLO-FRANCO-BELGIAN VETERINARY RELIEF FUND.

The HON. SEC. submitted the circular on this subject which had already been printed in *The Record*, and reported that copies had been sent to every member of this Association.

The PRESIDENT thought that, instead of subscribing from their funds, each member should be asked to canvass his friends, as they were doing for the wounded soldiers and other objects. They had among horse owners men who appreciated the work of the veterinary profession, and would no doubt assist.

The HON. SEC. asked whether the medical, legal, and other professions were getting up special funds for the relief of the Belgians? There were veterinary surgeons in Serbia, Russia, France, and other countries, who also wanted relief. (Hear, hear). While the Association wished, no doubt, to show sympathy with the present appeal, the funds would not permit of a very large subscription.

Mr. WILLETT proposed, Mr. PARKER seconded, and it was unanimously agreed, that the Association make a contribution of £5 5s. to the Fund, and express the hope that individual members would also subscribe.

[An interval was then called, during which tea was served].

IMMUNISATION EXPERIMENTS AGAINST EPIZOOTIC ABORTION.

Mr. R. J. VERNEY, on the resumption of business, opened a discussion on this important subject. He began by saying that contagious abortion was due to the abortion bacillus, which gave rise to the contagion and caused the fœtus to be discharged before the proper time. The bacilli, he was convinced, almost invariably got into the system through the mouth, from contaminated food or water; and heifers and second-calf cows seemed to be mostly affected by it. The premonitory symptoms were a slight discharge from the vulva—it might be for a day or two, or only for a few hours. The discharge contained the bacilli, and the aborted fœtus and the uterus also contained bacilli, which were also in the intestines when the aborted fœtus was born alive, and were sources of danger and infection.

The bacillus retained its vitality for a length of time, if not destroyed by disinfection, and so contaminated food and water. The aborted animal had a discharge for some time after, and should be carefully isolated until the discharge ceased. Contaminated litter and utensils, such as forks, spades, brooms, wheelbarrows and the like, should be rigidly disinfected; and the aborted fœtus should be burned, or buried in a good quantity of lime.

The county of Oxford became yearly more and more important in regard to the production of milk. The returns of the Board of Agriculture for 1911 showed the number of cows and heifers in that county to be 23,824, of which 16,390 were in milk; and the disease caused great inconvenience as well as monetary loss to dairy farmers. They got so sick of the prevalence of abortion that they requested, through the County Council, advice from the Board as to the best methods to adopt for its prevention, and, if possible, its eradication. Mr. P. Elford, the education lecturer, and Mr. G. R. Maud, staff instructor in agriculture, after discussing those applications, came to the conclusion that it was advisable, before asking the Education Committee to start any experiments, to wait and hear if the methods of immunisation which were being tried by the Abortion Committee appointed by the Board of Agriculture were successful. The reports from Cornwall were considered to be so satisfactory that it was decided to ask the Board of Agriculture if they would be willing to supply the material for the conduct of experiments in Oxfordshire. The Board offered to supply the vaccine free of charge to inoculate cows in infected areas, the local education authority employing veterinary surgeons to do the inoculations, and undertaking to keep complete records of each animal inoculated. The owners of infected herds expressed their readiness to carry out the observations. A meeting was held on the 5th April, 1911, between owners of herds and their veterinary surgeons, etc., to discuss the matter; when Mr. Jackson (Secretary to the Abortion Committee of the Board of Agriculture), read a paper on the experiments being conducted by the Board, and it was decided to carry out immunisation experiments. Fourteen infected herds were chosen for these experiments from the following:—

(1) Herds where above twenty per cent. of the cows aborted in the year previous, and where the disease had been prevalent for several years.

(2) Herds where less than twenty per cent. of the cows aborted in 1910, but in which cows regularly aborted each year.

(3) Breeding herds where practically no outside animals were brought in.

(4) Herds where little or no rearing was done, and in which cows were continually being bought in for milk.

Instructions were then sent to the veterinary surgeons as to the way in which the Board of Agriculture required the inoculations to be done.

Two methods of immunisation were employed:—

(1) Non-pregnant cows or heifers with Anti-abortion A.—(Living culture).

(2) Pregnant animals with Anti-abortion B.—(Dead culture).

Anti-abortion A. was injected into non-pregnant heifers or cows two months before being put to the bull.

Heifers usually done, but all empty, whether aborted or not, should be done. 25% of the empty cows or heifers should be left as *controls* for comparison. The history of each cow or heifer immunised should be recorded.

Anti-abortion B. injected into pregnant animals monthly, the first injection immediately after they have ceased balling after service, until seventh month of pregnancy. No first injection should be given later than the first month of pregnancy.

Mr. G. R. Bland accompanied each veterinary surgeon on these inoculations and kept a record of all the animals injected, and, as far as possible, all the results. He (Mr. Verney) had to thank Mr. Bland for supplying him with the collective work of these experiments in the fourteen herds selected and treated.

Table showing number of animals under each treatment and how they calved.

Treatment.	Heifers.	Cows.	Animals.	Barren.	Abort'd.	Calved
Anti-Abort'n (A)	70	193	263	22	15	226
Anti.Abort'n (B)	0	112	112	12	17	83
Controls	51	245	296	*13 (known)	54	229

* At first 167 controls were left, and of these 13 were barren. Later the number of controls was increased to 296, and number barren is not known.

Summary of Results.

Before experiments during 1910	(about)	1 in 4	aborted.	29.2%
After (A)	,,	1 in 18	,, †	5.7
After (B)	,,	1 in 7	,,	15.1
Controls	,,	1 in 6	,,	18.2

† [The 22 barreners are credited to the inoculation. If they are *deducted* the figures are 241 : 15 = 6.224%, about 1 in 16. Ed. *V. R.*]

When it is considered that there was a tendency to inoculate all the animals thought most likely to abort, and that the animals under the A treatment were on average younger than the controls, and, therefore, more likely to abort, the results are on the whole much in favour of the A treatment.

In most herds it is the exception for a cow which has once aborted to be kept and bred from again. Sixty-six cows which had aborted in 1910 were inoculated.

Under (A)	43	12 barren	2 aborted	24 calved.
Under (B)	13	2 ,,	6 ,,	5 ,,
Controls	10	4 ,,	4 ,,	2 ,,

Under (A)	1 in 21 aborted again	4.6%
Under (B)	1 in 3 ,,	46
Controls	1 in 3 ,,	40

A great deal of trouble had been experienced on some of the farms owing to the number of heifers aborting. When the trouble was greatest more of the heifers were inoculated and fewer controls left.

Under (A)	70 heifers	5 barren	4 aborted.
Controls	51 ,,	4 ,,	7 ,,

1 in 17 aborted under (A)	5.7%
1 in 7 of the Controls	13.7

At the end of 1913, at a general meeting of owners and others interested, it was unanimously decided to ask the Education Committee to continue the A treatment, the owners to pay for veterinary services; and the Board offering to continue to supply vaccine.

During the last 18 months over 1200 cows and heifers have been inoculated, *i.e.*, about 5% of the total in-calf heifer and cows in the county. This shows how prevalent the disease is.

The 1913 report is only preliminary. Results indicated in it have been confirmed by continuance of the work, and, as far as obtained, promise to be quite as satisfactory.

1915. Results in 11 herds.

Under (A)	277 cows inoculated	9 aborted.	
Controls	126	29 ,,	
1913. Before experiments, about	1 in	3 aborted	35%
After (A) treatment	,, 1 in	31 ,,	3.2
Controls	,, 1 in	5 ,,	23

1913. Aborted Cows.

Under (A)	49	aborted again	2	1 in 25	4%
Controls	8	,,	1	1 in 8	12

The results are considered very satisfactory by all concerned, and are still proceeding; but only the A injection is now used.

It has since been ascertained that, on one farm, of

20 under (A) none aborted.
10 Controls 3 aborted.

also that of 15 heifers under (A) none aborted,
of 15 heifers Controls 12 aborted.

They had not carried out any agglutination tests under the County Council of Oxfordshire, but he thought that body was the first county council that had taken steps at all. Their friend, Mr. Parker, had had something to do with agglutination tests. In Oxfordshire they were continuing their immunisation system, and would have another lot of results tabulated in a short time. (Applause).

Mr. PARKER said they started the agglutination test with a herd of 300 cows on different farms, took samples of blood from all, and sent them to the College. The fœtus from every animal that aborted was destroyed, and the uterus washed out with corrosive sublimate or boracic acid, and antiseptic pessaries were inserted. None of them were put to the bull until two months after calving, and they were all previously injected with the live bacilli. He never used any dead bacilli; but he inoculated, roughly, about 500 cows and heifers, and never had one that did not carry its calf up to the full time. The only abortion was the case of one "control." The people in his district were very keen on the treatment with live bacilli; one man having 60 heifers so treated, all of which stood.

Mr. VERNEY added that the County Council of Oxfordshire had now made it known that farmers in the county who were troubled with contagious abortion had only to apply, and they would get the serum from the Board, who send an inspector out, and pay everything else.

Replying to Mr. Broad, he said that in Oxfordshire they had not separated their cows at all.

Mr. PARKER said he put all cows under the agglutination test as fast as he could do them. They were shifted to what was practically an abortion farm. They inoculated all the heifers and cows two months before they were put to the bull, whether they passed the test or not. They had very valuable cattle indeed on that farm. They used the ordinary horse syringe for the injections.

Answering Mr. Willett, Mr. Parker said they did not inoculate the bull at all. He had had cases in his district where cattle had not been inoculated at all, and had found that in about three years the disease would wear itself out.

The PRESIDENT said he was sure they would all join in thanking Mr. Verney for his paper. (Hear, hear). He (Mr. Coleman) had been somewhat sceptical about the inoculation treatment for abortion. As far back as 1887 he recognised it as being of a contagious nature. In the case of one farm, with 52 cows, he suggested that the bull should be syringed immediately before service. The consequence was that not one got in calf; and so it occurred to him that the syringing was killing the spermatozoa at the same time. He then allowed one cow to come into œstrum, and then injected Chloride of zinc sol. After the bull had served the cow the sheath was thoroughly washed out, and the result was that 51 cows calved, with only one abortion, and that was in the case of a cow that had got out and been served by a bull on another farm. For the last four years he had been using Chinosol for injection. He thought a great deal of the bacilli were carried by one bull. In ordinary cases a cow aborted, and, when served, the bull became contaminated. He had been doing as he said ever since 1887, and during all that time had made careful notes. He asked whether sufficient precautions were taken in regard to the bull, and particularly when cows were aborting the bull was changed.

Mr. VERNEY said they had not done so in his experience.

Mr. MALE thanked Mr. Verney for opening the discussion on these immunisation experiments, a matter which had been ventilated in the public press; but, as far as he knew, the veterinary profession as a whole had not taken so much notice of it as it deserved. Mr. Verney having been much interested in the matter, he had asked him to open the discussion that day. He (Mr. Male) would be interested to know about what the cost was per cow. In Berkshire they were starting experiments on somewhat similar lines to those which Mr. Verney had described for Oxfordshire. Some time ago he was consulted about it, and he strongly advised that it should be done. It was a question whether county councils should pay, whether the farmer should pay, or whether each should pay part of the cost of those experiments. It was a little difficult to estimate the cost. Some farms might be a long way from the practitioner, and so would cost more. His suggestion was that the farmer should pay so much per cow, and the county council all other expenses. He thought the Veterinary Department of the Board had not been given sufficient credit for this system of inoculation. At meetings that had been held they had never heard a word of praise for the Board. It had been "slanged" on every possible occasion, but now they had a good thing they got no credit for it. As a matter of fact the Veterinary Department had prepared the abortin, laid down the rules and regulations as to its use, and had insisted on the necessity of veterinary surgeons being employed to carry out the inoculations.

In a pamphlet for farmers drawn up by the Berks County Council Instructor he was glad to say that due acknowledgement had been given. (Hear, hear).

Mr. Male asked if members had known any cases of inoculated cows to which large doses of living bacilli had been given spreading the disease to healthy cows.

Mr. VERNEY replied in the negative. There were one or two cases they did not find out at the time—cows and heifers which they thought to be empty were inoculated, but they did not abort.

Mr. MALE: If these bacilli when injected once confer immunity, how do you reconcile with it the fact that cows can have the bacilli in the uterus for months when naturally infected and yet it does not appear to confer immunity, as they sometimes go on aborting for two or three times? Is the natural immunity less powerful than the artificial one?

Mr. BROAD stated that he had found the agglutination test for abortion very useful in practice. He found the operation of removing samples of blood was much facilitated if the needle had been immersed in oil.

MEMBERS ON ACTIVE SERVICE.

The HON. SEC. raised the question whether members on active service, of which there were fifteen, should be asked to pay their subscriptions.

After a brief discussion, it was unanimously agreed, on the motion of Mr. WILLETT, seconded by Mr. MALE, "That members of the Association on active service be granted the option of becoming honorary members during their period of service; and if they wished to avail themselves of this privilege they should communicate with the Hon. Sec. and Treasurer."

NEXT MEETING.

The HON. SECRETARY said if the members desired it he would be very pleased to have the next meeting held at his house, and also any future meetings so long as the war lasts. (Applause).

Mr. PARKER moved that Mr. Male's kind offer be gratefully accepted; and that the meeting wished to place on record their thanks to Mr. and Mrs. Male for their kindness and hospitality on this occasion.

Mr. VERNEY seconded the resolution, which was carried by acclamation.

T.F.

The PRESIDENT brought to the notice of members the disabilities under which the Territorial veterinary officers were suffering, and, after discussion, he proposed that a vote of thanks should be sent to Mr. Garnett, President of the Royal College of Veterinary Surgeons, for the steps he had taken in the interests of these officers, which he felt sure would be appreciated by them and the whole profession. This was carried unanimously.

PETROL TAX.

Mr. MALE thought that all the members would wish to show their appreciation to the Chancellor of the Exchequer for allowing a reduction in the petrol duty to veterinary surgeons, and also to those Members of Parliament who had striven so hard to bring about this. He proposed that a letter should be written to those gentlemen expressing the thanks of the members of the R.C.V.M.A. This was agreed to.

A hearty vote of thanks to the President, Mr. Coleman, for his able conduct in the chair that day, and for his great service to the Association during his two years of office, concluded the meeting.

PARLIAMENTARY.

In the House of Commons on Thursday, Dec. 2.

VETERINARY SURGEONS (PROMOTIONS).

Mr. Newdegate asked the Under-Secretary for War whether he is now in a position to announce that the same rate of pay and the same regulations as to promotion will be granted to veterinary surgeons holding commissions in the Territorial Force as are granted to those holding commissions in the New Army; and whether he will explain why, owing to the present differentiation of treatment in the two branches of the Service, veterinary surgeons in the New Army have quite recently received promotion to captain's rank after one year's service, regardless of their professional experience, whereas veterinary surgeons in the Territorial Army are ineligible for promotion till they have served five years.

The Financial Secretary to the War Office (Mr. Forster): I regret I am not yet in a position to make a further statement, but hope a decision will very shortly be reached.

Mr. Newdegate: Is the hon. gentleman aware that this question has been asked since last June, and that every day men are being, in the opinion of many concerned, unjustly promoted over the heads of others owing to this unfair preference?

Mr. Forster: I am doing everything I can to expedite a decision.

December 8th.

Mr. Newdegate asked the Financial Secretary to the War Office whether he can now announce that arrangements have been made to grant the same scale of pay and the same incidence of promotion to veterinary surgeons of the Territorial Forces as are granted to veterinary surgeons in the New Army?

The Financial Secretary to the War Office (Mr. Forster): I regret I have nothing to add to the answer which I gave to my hon. friend on the 2nd instant.

Mr. Newdegate: Is it the case that this matter has been hung up by the Treasury officials, and that the War Office are prepared to grant this concession to veterinary surgeons serving in the Territorial regiments?

Mr. Forster: I think I had better say nothing more at present. I hope to be able to announce a decision before very long.

The supply of Horses for the Army.

The report of the committee appointed to consider what steps should be taken in England and Wales to secure an adequate supply of horses suitable for military purposes was issued on 8th inst. as a Parliamentary paper. The committee recommend:—

That the Board of Agriculture should (1) institute legislation to require compulsory annual registration of stallions; (2) increase the number of King's Premium stallions; (3) arrange for the inspection of stallions recommended for the Board's Premiums; (4) continue the brood mare scheme in those counties in which it has proved a success; (5) purchase stallions suitable for country service; (6) provide funds for the award of prizes for brood mares and foals; (7) arrange for a compulsory annual census of horses and for more complete returns of horses exported and imported; (8) reconstitute the Advisory Council and County Committees; (9) appoint an expert staff of officers to supervise the scheme.

That the War Office should (1) purchase a much larger number of horses in England and Wales; (2) increase their horse peace establishments; (3) purchase more horses direct from breeders; (4) purchase remounts when rising four; (5) purchase specially selected fillies and leave them with breeders until they have produced and reared foals.

Anglo-Franco-Belgian Veterinary Relief Fund.

The following additional donations are reported:—

Mr. G. P. Male, Reading	£1	1	0
Mr. Wm. Roach, Exeter	3	3	0
Royal Counties Veterinary Medical Assoc.	5	5	0
Previously reported	57	7	0
Total	£66	16	0

A fresh outbreak of foot-and-mouth disease has occurred between Bradford-on-Avon and South Wraxall, near Bath. Severe restrictions have been reimposed on the movement of animals.

Five sheep have been discovered in a snowdrift on Knott Rigg, on Buttermere Fells, near Keswick, where they had been entombed for 22 days. Three were still alive, and one was able to walk.

ARMY VETERINARY SERVICE.

War Office, London, S.W.

Extract from *London Gazette*,

War Office, Whitehall, Dec. 3.

Lt.-Cols. to be temp. Cols. whilst Directors of Veterinary Services:—F. Eassie, D.S.O., G. M. Williams (Dec. 1.)

Regular Forces. Army Veterinary Corps.

Temp. Lieuts. to be temp. Capts.:—W. S. Reid, F. G. Rugg, dated Nov. 20. W. D. Connochie (Nov. 21).

To be temp. Lieut.:—J. MacIlvenna, dated Nov. 22.

Dec. 6.

Temp. Lieuts. to be temp. Capts.:—A. J. Sellers, D. O. Turnbull, dated Nov. 23.

To be temp. Lieuts.:—G. H. Barber, G. W. Davidson, dated Nov. 24.

Dec. 7.

Temp. Lieuts. to be temp. Capts.:—H. S. H. Jones, dated Nov. 25. W. P. Reid, S. E. Hill (Nov. 26).

To be temp. Lieut.:—A. W. N. Pillers, F.R.C.V.S. (Nov. 25)

Dec. 8.

Temp. Lieut. to be temp. Capt.:—G. S. Thomas (Nov. 26)

To be temp. Lieut.:—H. L. Somers, dated Nov. 29.

Territorial Force. Army Veterinary Corps.

Dec. 9.

Maj. G. C. O. Fowler, ret. pay, to be temp. Major (Nov. 28); Maj. G. C. O. Fowler to be temp. Lt. Col. (Nov. 28).

A.V.C. Comforts Fund.—A further list is unavoidably held over.

OBITUARY

Miles Hutchinson, M.R.C.V.S., Howden, Yorkshire. Graduated, N. Edin.: May, 1893.

Mr. Hutchinson died on December 2nd, aged 44.

Barling.—On Saturday, December 4th, at a Nursing Home, Cheltenham, Agnes Fanny, the wife of F. W. Barling, Bartestree Court, (and late of Ross).

FOOT-AND-MOUTH DISEASE.

Board of Agriculture Leaflet No. 292.

Foot-and-mouth disease is caused by a virus which is too small to be seen by the aid even of the highest powers of the microscope, and it can pass through the minute pores of bacterial filters. Such a virus is spoken of as "filterable." Its nature is not yet definitely known, but in view of the character of the disease caused by it, the virus is probably bacterial.

Animals subject to the Disease.

Practically all the domestic animals and wild ruminants can be infected with foot-and-mouth disease. This statement, however, requires a certain amount of qualification. Cattle are usually looked upon as more susceptible to the disease than sheep, pigs, and goats, but the experience in Great Britain during the last few years has been that, given an outbreak amongst pigs or sheep, the disease spreads as rapidly as in the case of cattle. Human beings may also contract foot-and-mouth disease, though they are not in the most susceptible class. Horses, dogs, and cats have occasionally been known to contract the disease under natural conditions, but owing to the resistance they show to experimental

inoculation with the virus, and the infrequency of naturally contracted attacks of the disease amongst them, they must be considered much less susceptible than cattle, pigs, or sheep.

The degree of susceptibility varies considerably, even amongst susceptible animals, and it has not infrequently been observed that certain animals appeared to resist infection when their fellows were suffering from the disease.

Symptoms.

As the owner and attendants are often the only persons in a position to suspect the existence of disease in the first instance, the symptoms are described here to enable them to be on their guard against it, but not with the object of encouraging them to attempt to distinguish between foot-and-mouth disease and other diseases with somewhat similar symptoms. Foot-and-mouth disease is so serious to stockowners in general, that, if there is the least suspicion of its presence, that suspicion should be reported immediately to the authorities. (See last section of this leaflet, on *Reporting the Existence of the Disease*).

The incubation period after natural infection is from 48–72 hours to ten days, but the shorter periods are the more usual.

The chief symptoms of the disease are common to all affected animals, although the effects of the virus vary somewhat. In the initial stage the animals are dull, off their food, and if the temperature is taken, it will be found to be higher than normal—105° F., or even higher in cattle. At this stage, however, it is unlikely that a farmer would suspect the existence of foot-and-mouth disease.

The first symptoms of the disease to attract the farmer's attention are the sudden appearance of lameness, or slavering at the mouth, or both. Lameness in a number of animals, especially if present in more than one species—cattle and pigs or sheep, for example—should arouse the gravest suspicion. Salivation (slavering) in a number of animals or even in one animal should always be looked upon with suspicion, and should lead to an examination of the mouth. In affected cattle salivation is very frequently accompanied by a smacking or sucking sound, which is a very characteristic symptom of the disease. Slavering, however, is not nearly so noticeable in pigs and sheep as in cattle, and it is usually sudden lameness which first attracts attention in the first two. It is to be noted, also, that the lameness might escape the casual observer, as the animals are often so footsore that they remain lying down. Cattle, however, when moving, frequently shake their feet, as if trying to remove something from a hoof. Sheep, of course, will usually rise and move away when approached; if not, it probably means that their feet are very tender.

The lesions of the disease consist of vesicles (blisters) which appear on the mucous membrane, especially that of the mouth, and on the finer parts of the skin. In the mouth they appear on the pad, on the inside of the lips, and on the tongue. About the feet they are usually found around the coronet, at the junction of the skin with the hoof, at the base of the supernumerary digits, and on the soft tissue between the clays. They are also commonly found on the teats in females. Less commonly they may be seen around the muzzle, inside the vagina, and in pigs on the skin of the body. The vesicles vary in size and shape; quite commonly they are an inch in length, but they may be much smaller. They are easily broken by handling. When broken a clear liquid flows out, the mucous membrane over the vesicle looks ragged, and the under surface has a very red or raw appearance, which afterwards becomes yellow. On parts like the pad, where the mucous membrane is dense, the affected part of the mucous membrane may be much thickened, and may remain attached after the vesicle is broken. On handling, this thickened portion of membrane comes away in the form of leathery-looking tissue leaving a raw surface. About the feet the vesicles are similar to those in the mouth, except that the covering is denser. Cattle at pasture often show rapid loss of condition when attacked, as, owing to the pain in their mouths and feet, they are unable to obtain sufficient nourishment. In milch cows the milk yield falls considerably, and when the teats are affected, injury of a permanent nature may arise in the udder. The inflammation in the feet may lead to shedding of the horny parts. This happens in the later stages of the disease, but more commonly in sheep and pigs than in cattle. Even in the earlier stages the horn can frequently be seen separating around the coronet in a downward direction in sheep and pigs. Very young calves may die from enteritis (inflammation of the bowel) without showing external eruptions.

Animals usually recover from foot-and-mouth disease, but the loss, owing to depreciation, loss of milk, or permanent injury, is considerable. Some outbreaks, however, are more virulent than others, and in a very virulent outbreak a considerable number of animals may die, usually from intestinal complications.

Infection.

The contents of the vesicles are infective, and therefore material contaminated thereby, such as saliva, hides, foodstuffs, litter, dung and milk, will also be infective. The blood has only been found to be infective in the earliest stage of the disease.

The virus of this disease is easily destroyed by antiseptics, and by such natural processes of disinfection as drying and sunlight. There can be no doubt, however, that under certain conditions which exist in nature, but which are not fully known, the virus may remain active for months, and may be carried long distances. This probably accounts for the mysterious outbreaks which have occurred in Great Britain without apparent relation to a previous case. A comparatively low temperature—55° to 70° C. (131° to 158° F.)—destroys the virus.

Infection is spread from animal to animal by the fact of the animals being together in stables or on the pastures, or by the hands of milkers, or by the hands, boots or clothes of other attendants. It may be carried considerable distances on foodstuffs, and through a water supply being contaminated. When an animal is salivating, the threads of saliva and straws contaminated thereby may be blown a considerable distance by the wind, and thus reach other animals, or a watercourse from which they drink. The roads along which affected animals have passed, and the wagons in which they have travelled, may remain infective for some time. Rats, fowls, birds, cats, horses and dogs may act as mechanical carriers of infection. It is also conceivable that human beings affected with the disease might convey it to animals. The spread of infection from place to place is most insidious. A good deal of evidence has been collected which goes to show that a human being may, through his clothes, make the clothes of others infective. There is also a considerable amount of evidence that some animals which have recovered from the disease may be infective to others for a considerable time after recovery. The virus enters the body through the mucous membranes, and probably the commonest method of infection is by way of the alimentary tract. A very small amount of material from the vesicles (1/250th of a drop) has been found sufficient to cause infection.

Prevention.

It is not intended under this heading to deal with prevention in the sense of administeriug so-called preventive drugs, or resorting to preventive inoculation.

There is no drug known which renders an animal resistant to foot-and-mouth disease, and science has not so far provided a practicable method which can be used to immunise animals artificially.

If the disease breaks out on any premises it is the duty of the owner to take all reasonable measures to prevent the affected or suspected animals, and those in immediate association with them, from coming in contact with those of his neighbours. Affected stock should be kept away from a public road, from a water supply which reaches other farms, and from boundary fences immediately beyond which other stock are pastured. The attendants should be warned not to go amongst other cattle, sheep, goats or pigs, and all persons who have to leave the premises should disinfect their boots before doing so, otherwise they may carry infective material on to the roads or elsewhere. The boots should be scraped to remove particles of manure, and afterwards they should be swabbed with an ordinary disinfecting solution. If such is not available a saturated solution of common salt in hot water may be used. Milk should not be allowed to leave the premises, nor should it be given to other animals on the premises, unless it has been previously boiled. Dogs and poultry should not be allowed to roam at large.

The above precautions apply mainly to the owners of infected premises and any persons for whom they are responsible. It may happen, however, that other owners or their employees may find themselves on suspected premises before an outbreak has been declared. In such circumstances they should carry out the above-mentioned measures of disinfection, and they should refrain from attending to other animals until they have further disinfected their hands, and changed their boots and clothes.

Reporting the existence (or suspected existence) of the Disease.

The attention of stockowners is directed to Section 4 of the Diseases of Animals Act, 1894, and Article 1 of the Foot-and-Mouth Disease Order of 1895, which in effect provide that every person having or having had in his possession or under his charge an animal affected with or suspected of foot-and-mouth disease shall with all practical speed give notice to a police constable.

The object of immediately reporting any suspicious case is to enable the authorities to have immediate inquiry made, and, if disease is found to exist, to isolate it, and stamp it out before it can extend throughout the country. As the result of the disease spreading in 1869, it persisted in Great Britain until 1872, and it is estimated that 3,000,000 animals were attacked. An estimate was made of the losses sustained from the disease between 1870 and 1877 in Northumberland and Westmorland alone; in that period there were 9,035 outbreaks in these two counties, 236,755 animals were involved, and the loss was about £301,400.

The disease spread again in 1881-1884. In Great Britain 26,484 outbreaks occurred and 710,362 animals became affected, of which 9,361 died and 5,874 were slaughtered.

Copies of the leaflet may be obtained free of charge and post free on application to the Secretary, Board of Agriculture and Fisheries, Whitehall Place, London, S.W. Letters of application so addressed need not be stamped.

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Outbreaks (a)	Animals.	Outbreaks (a)	Animals.	Outbreaks (b)	Animals.	Outbreaks (b)	Animals.	(b)	Outbreaks (a)	Slaughtered. *
Gr. BRITAIN. Week ended December 4	18	18	6	20	1	3	34	86	13	62	134
Corresponding week in 1914 ...	15	15			3	4	‡	‡	5	87	574
Corresponding week in 1913 ...	20	20			9	10	33	59	13	53	437
Corresponding week in 1912 ...	12	13	1	6	1	1	49	95	20	53	526
Total for 49 weeks, 1915	546	613	55	691	48	85	‖804	‖1742	201	3776	16022
Corresponding period in 1914 ...	679	740	24	124	94	279	‡1530	‡2642	193	4143	38342
Corresponding period in 1913 ...	548	601	1	23	148	345	2243	4401	192	2387	29958
Corresponding period in 1912 ...	713	807	83	645	168	305	2684	5649	275	2781	37838

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities.

† Counties affected, animals attacked: — Stafford 1, York, West Riding 1, Lanark 1.

‖ Figures for thirty-six weeks only.

Board of Agriculture and Fisheries, Dec. 7, 1915.

IRELAND. Week ended Dec. 4	...	...	...	...	...	...	Outbreaks ...	8	2	32
Corresponding Week in 1914 ...	...	...	...	...	...	...	1	8	2	24
Corresponding Week in 1913 ...	...	...	...	...	...	...	...	21	2	8
Corresponding Week in 1912 ...	...	...	...	...	...	...	1	13	2	3
Total for 49 weeks, 1915 ...	2	2	...	...	1	3	68	386	238	1339
Corresponding period in 1914 ...	1	1	76	957	...	...	75	462	187	94
Corresponding period in 1913 ...	...	...	...	...	1	1	112	495	132	86
Corresponding period in 1912 ...	3	3	68	382	...	...	61	350	206	65

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Dec. 6, 1915

NOTE.—The figures for the Current Year are approximate only.

* As diseased or Exposed to Infection.